

“*pitched planks*”; עֵצִים being, as he says, in the plural number, and signifying *planks* or *boards*. But in this latter respect he is clearly in error; since the primary and proper meaning of עֵץ (*hētz*), of which עֵצִים is the plural in the state of construction, is *Tree* and not *Plank*. See Gen. i. 29. Deut. xxii. 6. and innumerable other texts.

Thus the literal translation of the words of the text עֵצֵי גִפְרִי is “*Trees of Pitch*,” or “*Pitch Trees*,” meaning the wood of that description of tree from which pitch is obtained.

It remains to be ascertained what tree, the product of the country where the Ark was built, is most likely to have had this name applied to it by Moses;—on which I confess my incompetency to offer an opinion.

Another observation on Mr. Drummond Hay's paper I make with regret. It is with respect to his remarks on the manner in which Padre Felipe Scio has rendered these same words עֵצֵי גִפְרִי, and likewise the words עֵצֵי שִׁטִּים (*hätzé-shittím*), Exod. xxv. 10, in his Spanish Version of the Bible. I have no intention to advocate the worthy Padre's translation, but I feel persuaded that Mr. Drummond Hay would not have ridiculed him for his “utter ignorance” if he had not overlooked the fact, that this *modern Spaniard* has merely followed the *ancient* authority of the Vulgate; he having translated the “*ligna lævigata*” of that version by “*maderas labradas*,” and the “*ligna de setím*” of the same by “*maderas de setím*.” I am, Gentlemen,

Your most obedient Servant,

North Buildings, Finsbury Circus,  
June 7, 1833.

CHARLES T. BEEK.

XXI. *Characters of some undescribed Genera and Species of Araneidæ.* By JOHN BLACKWALL, Esq. F.L.S. &c.\*

Tribe, TUBITELÆ, Latreille.

Genus, *Savignia*.

**EYES** six in number, unequal in size; four of them, which are disposed in a transverse row behind the anterior prominence of the cephalothorax, are separated by large intervals, the two intermediate ones being the smallest of the six, and immediately before each of the lateral eyes another is situated.

\* Communicated by the Author.

Maxillæ greatly enlarged at the base externally, where the palpi are inserted, and inclined towards the lip, which they encompass.

Lip short, broad, prominent at the apex, and semicircular.

Legs moderately robust; the anterior and posterior pairs, which are the longest, equal in length; the third pair is the shortest.

The name of *M. Savigny*, which I have bestowed upon this genus, is connected with highly interesting discoveries in this department of zoology.

*Savignia frontata.*

Cephalothorax oval, convex above, with a minute indentation in the medial line of the posterior region, and an acute perpendicular eminence of a conical form in front, surmounted by a tuft of fine hair. Mandibles small, dentated on the inner side, and inclined towards the pectus, which is heart-shaped. These parts, with the maxillæ and lip, are of a brownish-black colour. Legs and palpi brown, with a tinge of red. Each tarsus has three claws at its extremity; the two upper ones are finely pectinated, and the inferior one is abruptly inflected near its base. The fourth and fifth joints of the palpi are expanded laterally; the former projects an apophysis in front tapering into an acute point curved outwards; both are convex externally, concave within, and are connected with the sexual organs, which are highly developed, complicated in structure, and of a very dark red-brown colour. Abdomen oval, rather convex above, projecting over the base of the cephalothorax; it is sparingly clad with hair, glossy and black.

Length, from the anterior part of the cephalothorax to the extremity of the abdomen,  $\frac{1}{12}$ th of an inch; breadth of the cephalothorax, which equals that of the abdomen,  $\frac{1}{28}$ ; length of a fore leg  $\frac{1}{10}$ .

The above is the description of a male, which sex is found in considerable abundance, in the months of October and November, on rails in the immediate vicinity of Crumpsall Hall, near Manchester. I have not yet succeeded in capturing a single female; and concerning the œconomy of the animal, I can merely state that it is active during the day.

The short and broad lip, the converging maxillæ, the large intervals between the eyes (those of the lateral pairs excepted), and the difference in the relative length of the legs, at once distinguish this spider from the species constituting the genus *Dysdera*, to which it is nearly allied.

Genus, *Walckenaëria.*

Eyes eight in number, unequal in size, disposed in pairs

on the anterior eminence of the cephalothorax, which is elongated and acute. One pair is seated on its summit, a second a little lower, in front, describing with the former a trapezoid whose anterior side is the shortest; and the two other pairs are placed obliquely, one on each side of the frontal eminence. The eyes of the lateral pairs, which are geminated, are the largest, and those of the anterior pair are the smallest of the eight.

Maxillæ strong, convex externally, greatly dilated at the base, where the palpi are inserted, encompassing the lip.

Lip short, broad, prominent at the apex, and semicircular.

Legs robust; the anterior and posterior pairs, which are the longest, equal in length in the females; the third pair is the shortest.

I have conferred upon this singular genus the name of a distinguished living arachnologist, the celebrated Baron Walckenaër.

*Walckenaëria acuminata.*

Cephalothorax oval, gibbous above, with a minute indentation in the medial line of the posterior region, and terminating in an acute prominence before. Pectus oblong heart-shaped. Mandibles vertical, moderately strong, convex in front, and dentated on the inner side. These parts, with the maxillæ and lip, are glossy, and of a dark brownish-black colour. Palpi robust, and without claws; the third joint is remarkably short, and the fourth and fifth joints are somewhat dilated. Legs hairy, but destitute of spines. Each tarsus has three claws at its extremity; the two superior ones are strongly pectinated, and the inferior one is abruptly inflected near its base. The colour of these organs is bright rufous. Abdomen oval, rather convex above, projecting a little over the base of the cephalothorax; it is sparingly clad with hair, glossy, and deep black. The plates of the spiracles are of a pale yellow colour.

Length, from the anterior part of the cephalothorax to the extremity of the abdomen,  $\frac{3}{20}$ ths of an inch; length of the cephalothorax  $\frac{1}{13}$ ; breadth  $\frac{1}{10}$ ; breadth of the abdomen  $\frac{1}{13}$ ; length of a fore leg  $\frac{1}{3}$ ; length of a leg of the third pair  $\frac{1}{6}$ .

Similar to the female in colour, and in the relative length of its legs, but rather smaller than she is, the male has the anterior part of the cephalothorax much more elongated and slender, measuring about  $\frac{1}{20}$ th of an inch in length; it is elevated vertically, and dilated near the middle and at the apex, the latter dilatation being separated by a transverse groove into an upper and a lower segment, both of which are rough with short strong hairs. On these enlargements the eyes are situated. The third joint of the palpi expands gradually to-

wards its anterior extremity; the fourth joint is short, terminating in three apophyses, and on the upper part of the inner apophysis, which is longer than either the exterior or the inferior one, and is curved outwards, a small prominence occurs; the fifth or terminal joint is somewhat oval, convex externally, concave within, comprising the sexual organs, which are black, with a tinge of red; they are highly developed and complicated in structure, having a strong spiny process on the outer side curved into a circular form.

My brother, Mr. Thomas Blackwall, discovered this remarkable spider in the month of October 1832, under stones and on rails in the township of Crumpsall, near Manchester.

*Walckenaëria cristata.*

In colour this species is similar to *Walckenaëria acuminata*, with the exception of the legs, which have a deeper shade of rufous; but in external structure it presents several obvious points of difference. The anterior part of the cephalothorax is less elevated and acute, and the pectus is shorter and broader proportionally.

Length, from the anterior part of the cephalothorax to the extremity of the abdomen,  $\frac{1}{11}$ th of an inch; breadth of the abdomen  $\frac{1}{22}$ . The fore and hind legs, which are the longest and equal in length, measure  $\frac{1}{10}$ , and the third pair is the shortest.

The relative length of the legs is different in the sexes; the male has the fourth pair the longest, measuring  $\frac{1}{8}$ th of an inch; then the second, the third pair being the shortest. The anterior eminence of the cephalothorax is shorter and very much stronger than the same part in the male of *Walckenaëria acuminata*; it is divided into two segments at the summit by a deep transverse groove, and each is surmounted by a tuft of fine hair inclined towards the groove and forming a crest. One pair of eyes is seated on the hinder part of the posterior division of the eminence, near its summit, and another pair is situated near the summit of the anterior division, in front, describing with the former a trapezoid whose shortest side is before; the other eyes are disposed in pairs, one on each side of the frontal prominence, and are geminated. The eyes of the lateral pairs are the largest, and those of the anterior pair the smallest of the eight. The third joint of the palpi is enlarged at its anterior extremity; the fourth presents two apophyses, one small, projecting underneath; the other, which is much larger and tapers to a point, curved outwards, being situated in front; the fifth joint, and the anterior apophysis of the fourth are expanded laterally; they are convex externally,

concave within, and are connected with the sexual organs, which are highly developed, exhibiting several curved spiny processes, (a certain indication that the animal has attained maturity,) and are of a dark red-brown colour.

Mr. T. Blackwall discovered this minute species in October, 1832. It is found in abundance under stones in the township of Cheetham, near Manchester.

*Walckenaëria cuspidata.*

This species is precisely similar in colour to *Walckenaëria acuminata*, but in the form of the pectus it resembles *Walckenaëria cristata*. The upper part of the cephalothorax is not so gibbous as that of either of the other species belonging to the genus, and has no indentation in the medial line of the posterior region.

Length, from the anterior part of the cephalothorax to the extremity of the abdomen,  $\frac{1}{10}$ th of an inch; length of the cephalothorax  $\frac{1}{20}$ ; breadth  $\frac{1}{20}$ ; breadth of the abdomen  $\frac{1}{22}$ . The legs of the first and last pairs, which are the longest and equal in length, measure  $\frac{1}{7}$ th, and those of the third pair, which are the shortest,  $\frac{1}{9}$ th.

The male is rather smaller than the female, but the relative length of its legs is the same. In the trapezoid formed by the four intermediate eyes, immediately in front of the posterior pair, it has a small, conical, acute prominence surmounted by a few fine hairs. The fourth joint of the palpi terminates in two apophyses, the smaller one projecting on the under side; the longer has a prominence at its exterior part near the base, and curves outwards in front of the fifth joint, which is somewhat oval, convex externally, concave within, comprising the sexual organs; they are highly developed and complicated in structure, with a strong spine externally curved into a circular form.

This spider occurs on rails in the vicinity of Manchester, in the month of November.

By the pointed form of the anterior part of the cephalothorax, the converging maxillæ, and the structure of the legs, the spiders of this genus are connected with the *Drassi*; but they differ from them essentially in the disposition and relative size of the eyes, and in the figure of the lip.

Genus, *Textrix*.

Eyes eight in number, unequal in size, disposed in two transverse rows on the anterior part of the cephalothorax; four constituting the anterior row, which is slightly curved, are adjacent and minute, the two intermediate ones being the

smallest of the eight; the posterior row is greatly curved, with its convexity directed forwards; it comprises the other four eyes, which are large and separated by wide intervals, the two intermediate ones being the largest of all.

Maxillæ powerful, curved towards the lip, enlarged and rounded at the apices.

Lip large and nearly quadrate.

Legs moderately long, tapering to their extremities; the fourth pair is the longest, the other three pairs being equal in length.

The spiders belonging to this genus are sedentary, constructing a horizontal web of a compact texture, with which a tube is connected conducting to the spider's retreat, in the crevices of rocks and walls, and in the intervals among stones.

*Textrix agilis.*

Cephalothorax inversely heart-shaped, but elongated and very prominent before; the sides, which are glossy, slope abruptly, and are marked with deep furrows extending from the carina to the margins, and a narrow longitudinal indentation occupies the medial line of the posterior region; its colour is dark brownish-black, with a yellowish-white band of short hairs extending along the carina, and numerous long black hairs in front. Mandibles strong, conical, armed with a few teeth on the inner side, and inclined towards the pectus, which is heart-shaped. These parts, with the maxillæ and lip, are brownish-black; the two latter organs being much the palest, particularly at their extremities. The legs and palpi are light brown, with brownish-black bands, and are furnished with numerous erect, slender, black spines. There are three claws at the extremity of each tarsus; the two superior ones are long, curved, and deeply pectinated, and the inferior one is provided with a pair of small teeth on each side near the base, where it is inflected; beneath the claws are two strong bristles thickly clad with minute hairs on the under side. (In order to discern this structure a highly magnifying power must be employed.) A slender, curved, pectinated claw terminates each palpus. Abdomen oval, projecting a little over the base of the cephalothorax; it is thickly covered with hair, and is black above with a broad, dentated band along the middle, of a yellowish-white colour; the anterior part of the band comprises four small black spots, two on each side of the medial line, forming a parallelogram; the sides of the abdomen are mottled with yellowish-white, and the under part is reddish-brown, marked with a few minute yellowish-white and black spots. The plates of the spiracles are yellowish-

white. The superior spinning mammulæ, which are much longer than the rest, very prominent, and triarticulate, have the papillæ, or delicate tubes from which the silk issues in the act of spinning, disposed along the under side of the terminal joint; their colour, and that of the intermediate pair, is red-brown, the inferior pair being black.

Length, from the anterior part of the cephalothorax to the extremity of the abdomen, not including the spinners,  $\frac{3}{10}$ ths of an inch; length of the cephalothorax  $\frac{1}{8}$ ; breadth  $\frac{1}{10}$ ; breadth of the abdomen  $\frac{1}{10}$ ; length of a posterior leg  $\frac{7}{20}$ ; length of a leg of the first, second, and third pairs  $\frac{5}{10}$ ; length of a superior spinning mammula  $\frac{1}{20}$ .

The male is smaller and darker coloured than the female, but the relative length of its legs is the same; their absolute length, however, is greater, a posterior leg measuring  $\frac{2}{3}$ ths of an inch. The third and fourth joints of the palpi are short, the latter projecting a strong acute apophysis from the outer side of its anterior extremity; the fifth joint is of an oblong oval figure pointed before; it is convex and hairy externally, concave within, comprising the sexual organs, which are highly developed, complex, with prominent, curved spiny processes, and are of a brownish-black colour tinged with red.

In the summer of 1830, I found this active spider on rocks and stone-walls in the pass of Llanberis, Caernarvonshire; and I have since met with it in abundance at Oakland, in Denbighshire, and in other parts of North Wales. The *Textrices* are nearly allied to the *Aranææ* of M. Latreille, which comprise the *Tegenariæ* and *Agelenæ* of M. Walckenaër, and the *Arachnes* of M. Savigny. By the disposition of the eyes they also appear to connect the *Tubitelæ* with the *Citigradæ* through the medium of the genus *Dolomedes*.

Tribe, INEQUITELÆ, Latreille.

Genus, *Manduculus*.

Eyes eight in number, unequal in size, arranged in two transverse rows on the anterior part of the cephalothorax; the four intermediate ones, which are the largest, form a square, and the other four are disposed obliquely in pairs on the sides of the square, the eyes constituting each being placed on a small eminence, and nearly contiguous.

Maxillæ long, inclined towards the lip, enlarged at the base where the palpi are inserted, and slightly so at the apices, which converge abruptly and are contiguous.

Lip large, triangular, truncated at the vertex.

Legs long and slender; the first pair is the longest, then the second, the third pair being considerably the shortest.

Mandibles very powerful, convex in front, diverging widely at their lower extremities, and armed with a long moderately curved nail, and two rows of teeth on the inner side. Those of the male have an obtuse, conical prominence near the insertion of the nail, which latter appendage has a small indentation about the middle externally, and a corresponding projection, or minute tooth, within.

*Manduculus ambiguus.*

Cephalothorax rather large, convex above and glossy; it is of an oval form truncated in front, with an indentation in the medial line of the posterior region; the colour is light reddish brown, with a black band along the middle, one on each side, just above the margins, and a short black streak directed backwards from each lateral pair of eyes. The pectus is heart-shaped, and rather darker coloured than the cephalothorax. The colour of the mandibles is light reddish-brown, that of the maxillæ and lip being dark red-brown. Legs and palpi yellowish-brown; they are sparingly supplied with hair, but the former are destitute of spines. Each tarsus has three claws at its extremity; the two superior ones are finely pectinated, and the lower one is abruptly inflected near its base. A single claw, pectinated about one third of its length, (the last tooth of the series being much the longest,) terminates each palpus. Abdomen oval, projecting a little over the base of the cephalothorax; the colour is yellowish-brown, above irregularly bordered with black; a narrow longitudinal band of pale yellow, having its anterior half bordered with black, and comprising a slender black streak, occupies the medial line. Along each side extends a broad band of dull yellow, which is palest on the upper edge, and is tinged with light brown below. Underneath the abdomen is yellowish-brown, with a band of a darker hue along the middle, bounded on each side by a faint yellow line. The plates of the spiracles are yellow. This species varies considerably in colour.

Length, from the anterior part of the cephalothorax to the extremity of the abdomen,  $\frac{1}{4}$ th of an inch; length of the cephalothorax  $\frac{1}{9}$ ; breadth  $\frac{1}{11}$ ; breadth of the abdomen  $\frac{1}{8}$ ; length of an anterior leg  $\frac{5}{8}$ ; length of a leg of the third pair  $\frac{1}{2}$ .

The male, which is smaller than the female, has the abdomen more distinctly marked; the upper part being almost black, and the medial and lateral bands nearly white. The third joint of the palpi is strong and very short; the fourth is dilated regularly to its anterior extremity, which is truncated; and the fifth has two slender apophyses, the shorter one at-



tached to the upper side of the sexual organs, the longer connected with the same organs on the inner side and extending beyond them. The sexual organs are glossy, of a globular form, with a pointed elongation anteriorly; their colour is dark reddish-brown, approaching to black.

This spider, which was discovered by Mr. T. Blackwall in September 1831, under stones and rubbish in the township of Crumpsall, pairs in the month of October. In it are combined several striking characteristics of the genera *Theridion* and *Tetragnatha*. Allied to the former by the structure of the mouth, and the irregularity of the insignificant web it fabricates, it resembles the latter in the form and relative length of the legs, which it frequently extends in the same manner as *Tetragnatha extensa*; thus closely connecting by its organization and œconomy the *Inequitelæ* with the *Orbitelæ*.

Oaklamb, near Llanwrst, Denbighshire,  
July 12th, 1833.

XXII. *On the alleged Discovery of Coal at Billesdon, Leicestershire.* By the Rev. W. D. CONYBEARE, M.A. F.R.S.

*To the Editors of the Philosophical Magazine and Journal.*  
Gentlemen,

**I**N the last Number of your valuable Journal, (p. 76) is a "Notice of the Discovery of Coal-measures at Billesdon, Leicestershire," which strongly illustrates the misunderstanding, so much to be regretted, that is often found to prevail in the minds of those engaged in practical researches, with regard to those *generalized views of science*, which are the only guides of really effective inquiries, but which are by such persons hastily thrown aside, under the entire misconception that they are founded only on data purely theoretical; whereas, in fact, the general views of systematic science are necessarily, wherever they are just, founded primarily on an extensive induction from practical observation, and from practical observation alone. They present, indeed, merely the combined and condensed results of the very widest practical observation,—divested only of the very obvious cause of error which a narrow spirit of judging from mere local acquaintance with a single district must necessarily introduce.

Thus in the notice which has occasioned these remarks, Mr. Holdsworth announces the discovery of coal-measures at Billesdon, without anything like a precise description of the thickness, range or extent of a single bed of coal; and relying only on washing from the materials produced by boring;